WHAT IS CLAIMED IS:

1. A method for emulating on a computer system the operation of a guest computer system, comprising the steps of:

providing an emulation program that runs as an application on the operating system of the host computer system, the emulation program emulating for at least one guest application program the operation of a guest operating system;

receiving at the emulation program blocks of software instructions from the guest application program; and

determining, for each block of instructions, whether (a) the block of instructions includes user level instructions, in which case the instructions are passed to the processor of the computer system for execution, or (b) the block of instructions include supervisor level instructions, in which case the block of instructions is translated and the translated block of instructions is passed to the processor of the computer system for execution.

2. The method for emulating the operating of a guest computer system on a host computer system of claim 1, wherein the step of translating supervisor level instructions comprises the step of dynamically translating a block of instructions that include at least one supervisor level instruction.

3. The method for emulating the operating of a guest computer system on a host computer system of claim 1, further comprising the step of saving to a cache the translated instruction.

4. The method for emulating the operating of a guest computer system on a host computer system of claim 3, further comprising the step of evaluating for each block of supervisor level instructions to be translated, whether a translation for the instruction block resides in cache memory.

5. The method for emulating the operating of a guest computer system on a host computer system of claim 4, further comprising the step of retrieving a translated instruction block from cache memory when it is determined, following an evaluation of cache memory, that a translated instruction block associated with an untranslated block of supervisor level instructions resides in cache memory.

6. The method for emulating the operating of a guest computer system on a host computer system of claim 5, wherein the step of translating an untranslated block of supervisor level instructions is performed only if translated instruction block associated with the untranslated block of supervisor level instructions does not reside in cache memory.

7. The method for emulating the operation of a guest computer system on a host computer system of claim 6, further comprising the step of passing a series of user level instructions to the processor of the computer system and monitoring the computer system for an exception to indicate a transition from user level instructions to supervisor level instructions.

8. The method for emulating the operating of a guest computer system on a host computer system of claim 1, wherein the guest operating system is designed to run on the processor of the computer system.

9. The method for emulating the operating of a guest computer system on a host computer system of claim 1, wherein the guest operating system is a more recent version of the host operating system.

10. A method for emulating on a host computer system the operation of a guest computer system, wherein the application programs of the host computer system and the application programs of the guest computer system can execute on the processor of the host computer system, comprising the steps of:

providing an emulation program that emulates the operation of a guest operating system;

receiving at the emulation program software instructions from a guest application program;

parsing the instructions into blocks of instructions;

determining for each block of instructions whether the block includes supervisor level instructions, wherein each block of instructions that does not include a supervisor level instruction is passed to the processor of the host computer system, and wherein each block of instructions that includes a supervisor level instruction undergoes a translation step before being passed to the processor for execution.

11. The method for emulating on a host computer system the operation of a guest computer system of claim 10, wherein the step of passing each block of instructions that do not include a supervisor level instruction to the processor of the host computer system comprises the step of passing user level instructions to the host processor.

12. The method for emulating on a host computer system the operation of a guest computer system of claim 11, wherein the step of passing user level instructions to the host processor comprises the step of passing user level instructions from a guest application program to the host processor without translation of the instructions.

13. The method for emulating on a host computer system the operation of a guest computer system of claim 12, further comprising the step of saving to a cache each translated instruction.

14. The method for emulating on a host computer system the operation of a guest computer system of claim 13, further comprising the step of evaluating for each block of instructions that includes a supervisor level instruction to be translated, whether a translation for the block of instructions resides in the cache.

15. The method for emulating on a host computer system the operation of a guest computer system of claim 14, further comprising the steps of,

if a translation for a selected block of instructions is in the cache, passing the translated block of instructions to the processor of the host computer system for execution; and

if a translation for a selected block of instructions is not in the cache, translating the selected block of instructions and passing the translated block of instructions to the processor of the host computer system for execution.

16. The method for emulating on a host computer system the operation of a guest computer system of claim 10, wherein the guest operating system is a more recent version of the operating system of the host computer system.

17. A method for emulating on a host computer system the operation of a guest computer system, the guest computer system including guest application program designed to executed on the processor of the host computer system, comprising the steps of:

providing an emulation program that runs as an application on the operating system of the host computer system, the emulation program emulating for at least one guest application program the operation of a guest operating system;

receiving at the emulation program blocks of instructions from a selected guest application program;

parsing each block of instruction to determine whether each block of instructions includes supervisor level instructions, and,

for those blocks of instructions that do not include supervisor level instructions, passing the block of instructions to the processor of the host computer system for execution; and

for those blocks of instructions that include supervisor level instructions, translating the block of instructions before passing the translated block of instructions to the processor of the host computer system for execution.

18. The method for emulating on a host computer system the operation of a guest computer system of claim 17, further comprising the step of determining, for each block of instructions that include supervisor level instructions, whether a translation for the block of supervisor level instructions exists in cache memory, and for each translated block of supervisor level instructions that exists in cache memory, passing the translated block of supervisor level instructions to the processor of the host computer system for execution.

19. The method for emulating on a host computer system the operation of a guest computer system of claim 18, further comprising the step of saving to cache memory each translated block of supervisor level instructions.

20. The method for emulating on a host computer system the operation of a guest computer system of claim 17, wherein the guest operating system is a more recent version of the host operating system.